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(71)Applicant : OLYMPUS OPTICAL CO LTD

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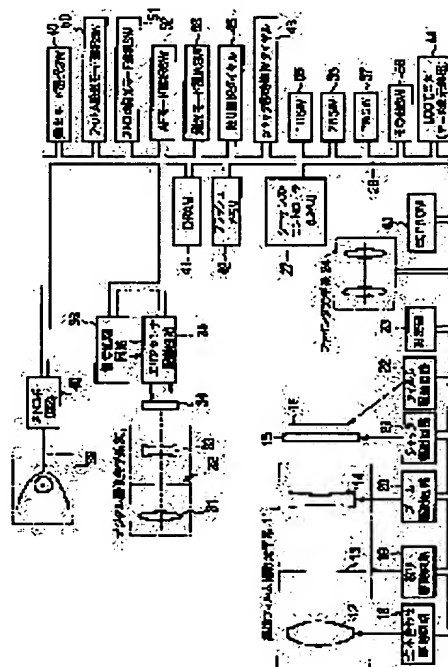
(72)Inventor : WATANABE SAYURI

(54) CAMERA

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a camera excellent in handleability which is effective to prevent theft and which prevents registering and inputting information from getting troublesome even when there are plural users.

SOLUTION: Specified identification information is inputted by a digital image pickup optical system 30 and an area sensor 34, and reference information referred to in relation to the identification information is inputted by another switch 58. Plural pieces of reference information are stored in an EEPROM 43, and the identification information and the reference information are collated by a sequence controller 27 so as to discriminate whether or not the pieces of information match with each other. Based on the discriminated result, the operation of the camera is decided.



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CLAIMS

[Claim(s)]

[Claim 1] An identification information input means to input predetermined identification information, and a reference information input means to input the reference information referred to by relating with the above-mentioned identification information, The reference information memorized by the reference information storage means which can two or more memorize the above-mentioned reference information, and the identification information and the above-mentioned reference information storage means which were inputted into the above-mentioned identification information input means is collated. The camera characterized by providing a distinction means to distinguish whether such information is in agreement, and a decision means of operation to opt for actuation of a camera based on the distinction result of this distinction means.

[Claim 2] The above-mentioned identification information is a camera according to claim 1 characterized by being the information inputted by the operating member or the information about a camera user's living body-description.

[Claim 3] Furthermore, the camera according to claim 1 characterized by providing an operating-sequence modification means to change a fixed operating sequence into the operating sequence according to a camera user when the above-mentioned identification information and the above-mentioned reference information were in agreement with the above-mentioned distinction means and it is distinguished.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention has the data entry unit which can identify the user of a camera, memorizes two or more reference information and each photography mode, and relates to the camera which changes photography mode by the user of a camera.

[0002]

[Description of the Prior Art] In recent years, the camera which has an anti-theft function is developed and there is a camera which inputs and uses data as the function.

[0003] For example, only when a password is entered and this password is in agreement with a date setting button, the technique which enables actuation of a camera is indicated by JP,6-250248,A.

[0004]

[Problem(s) to be Solved by the Invention] In respect of theft prevention with a camera which enters a password whenever it uses it, registering a password, since a user who mentioned above is specified, it is effective.

[0005] However, registration of a password and the activity of an input are complicated, and are troublesome, and had the danger of forgetting the password to enter.

[0006] Furthermore, since only one kind of password was registered, when two or more persons used it, the password needed to be changed by these two or more people each time, using the password to register, and it was inconvenient. In addition, by those who use it, the specification of a camera could not be changed but user-friendliness became bad.

[0007] This invention is made in view of the above-mentioned technical problem, that purpose is effective in theft prevention, and a user is that even two or more persons do not become complicated, but informational registration and an informational input offer a user-friendly camera for them.

[0008]

[Means for Solving the Problem] Namely, an identification information input means by which this invention inputs predetermined identification information, A reference information input means to input the reference information referred to by relating with the above-mentioned identification information, The reference information memorized by the reference information storage means which can two or more memorize the above-mentioned reference information, and the identification information and the above-mentioned reference information storage means which were inputted into the above-mentioned identification information input means is collated. It is characterized by providing a distinction means to distinguish whether such information is in agreement, and a decision means of operation to opt for actuation of a camera based on the distinction result of this distinction means.

[0009] If it is in the camera of this invention, predetermined identification information is inputted by the identification information input means, and the reference information referred to by relating with the above-mentioned identification information is inputted by the reference information input means. Two or more storage of the above-mentioned reference information is carried out at a reference

information storage means. And it is distinguished whether the reference information memorized by the identification information and the above-mentioned reference information storage means which were inputted into the above-mentioned identification information input means is collated with a distinction means, and such information is in agreement. Actuation of a camera is determined by the decision means of operation based on the distinction result of this distinction means.

[0010]

[Embodiment of the Invention] Hereafter, the gestalt of implementation of this invention is explained with reference to a drawing.

[0011] The camera concerning introduction and the gestalt of implementation of the 1st of this invention is explained.

[0012] Drawing 2 is what showed the appearance configuration of the camera concerning the gestalt of the 1st operation, and the perspective view which looked at (a) from the camera front, and (b) are the perspective views seen from camera back.

[0013] In drawing 2, the taking lens 2 of the front surface part of a camera body 1 which it is as photography optical system of a film-based camera is mostly formed in the center. And the image pick-up lens 3 and the optical finder 4 of digital image pick-up optical system for taking a photograph and obtaining image data near this taking lens 2, are prepared. Furthermore, the zoom switch 5 which consists of WIDE switch 5b which is an actuation switch for driving to a TELE switch 5a [which is an actuation switch for driving to a long focus side], and short focus side is formed in the front section of a camera body 1.

[0014] Release ** 6 and the stroboscope light-emitting part 7 as a release switch are formed in the top-face section of the above-mentioned camera body 1.

[0015] Furthermore, the LCD monitor 8 for displaying the electronic image mostly obtained by digital image pick-up optical system in the center section and photography data is formed at the tooth-back section of a camera body 1. And near this LCD monitor 8, the input operating button 9 which consists of A**9a and B ** 9b is formed.

[0016] Drawing 1 is the block diagram showing the internal configuration of the camera concerning the gestalt of the 1st operation.

[0017] In drawing 1, the silver salt filming optical system 11 has the lens group 12 for focus doubling, diaphragm 13, and the lens group 14 for zoom, and changes. The photographic subject flux of light by which incidence was carried out is led to a silver halide film (film) 16 through the shutter style 15 from this silver salt filming optical system 11.

[0018] Drive control of the above-mentioned lens group 12 for focus doubling, diaphragm 13, and the lens group 14 for zoom is carried out by the focus doubling drive circuit 18, the diaphragm drive circuit 19, and the zoom drive circuit 20, respectively. Furthermore, drive control of the shutter style 15 and the film 16 is carried out by the film drive circuit 22 for performing drive control of winding and rewinding, respectively. [of the shutter drive circuit 21 and a film 16]

[0019] In addition, the above-mentioned focus doubling drive circuit 18 and the zoom drive circuit 20 drive the lens group 12 for focus doubling, and the lens group 14 for zoom in the direction of an optical axis, respectively, and perform focus doubling and zooming.

[0020] Moreover, the above-mentioned focus doubling drive circuit 18, the diaphragm drive circuit 19, the zoom drive circuit 20, the shutter drive circuit 21, and the film drive circuit 22 are connected to a sequence controller (CPU) 27 through a data bus 26 with the ranging section 23 and the finder optical system 24 which measure the distance to the photographic subject which is not illustrated by the principle of well-known triangular ranging.

[0021] On the other hand, the digital image pick-up optical system 30 has the lenses 31 and 33 of image pick-up optical system, and the fixed diaphragm 32, and is constituted, and image formation of the image incorporated by this digital image pick-up optical system 30 is carried out to an area sensor 34.

[0022] The area sensor drive circuit 35 where this area sensor 34 was connected is a circuit for carrying out drive control of the area sensor 34, and receiving the analog video signal from this area sensor 34. And the analog video signal from this area sensor drive circuit 35 is changed into a receipt, that analog video signal is changed into a digital video signal, and the digital disposal circuit 36 which performs predetermined processing of color conversion etc. further is connected to this area sensor drive circuit 35.

[0023] Moreover, the various switches further described as the selection dial 46 below are connected to CPU27 through the data bus 26 at the time of the stroboscope circuit 40 for these area sensor drive circuit 35 and a digital disposal circuit 36 to carry out drive control of the stroboscope light-emitting part 39, DRAM41, a flash memory 42, EEPROM43 and the LCD monitor 44, the diaphragm selection dial 45 that chooses the value of diaphragm 36, and the shutter second which chooses the time of a shutter second.

[0024] namely, -- a data bus -- 26 -- connecting -- having -- **** -- a thing -- exposure -- mode selection -- a switch -- (-- SW --) -- 49 -- a film -- feed --

mode selection -- a switch -- (--- SW ---) -- 50 -- a stroboscope -- luminescence -- mode selection -- a switch -- (--- SW ---) -- 51 -- AF -- mode selection -- a switch -- (--- SW ---) -- 52 -- a photometry -- mode selection -- a switch -- (--- SW ---) -- 53 -- the first -- release -- a switch (1RSW) -- 55 -- second -- release -- a switch (2RSW) -- 56 -- power -- a switch (PWSW) -- 57 -- others -- a switch -- (--- SW ---) -- 58 -- it is .

[0025] The above DRAM 41 is volatile memory in which high-speed writing is possible, and the digital video signal from a digital disposal circuit 36 is stored temporarily. The above-mentioned flash memory 42 memorizes the digital video signal stored temporarily at the above DRAM 41. This flash memory 42 is electrically rewritable, and since storage of an electronic image is held also in the condition that a camera is not loaded with the cell, it is used for storage of an electronic image. Moreover, reference information etc. is memorized by EEPROM43.

[0026] The above-mentioned LCD monitor 44 is equivalent to the LCD monitor 8 of drawing 2 , and the photoed image, the selection demand of register mode, the demand of reference information and identification information, photography mode, etc. are displayed.

[0027] The above-mentioned exposure mode selection switch 49 is the switch input section for performing priority auto, manual photography, and program auto at the time of diaphragm priority auto and a shutter second. Moreover, the film feed mode selection switch 50 is the switch input section which performs selection of single copy mode and a continuous shooting mode.

[0028] The above-mentioned stroboscope luminescence mode selection switch 51 is the switch input section for choosing each mode of AUTO, AUTO-S, FILL-IN, and OFF. Furthermore, AF mode selection switch 52 is the switch input section for performing selection of one-point AF, three-point AF, and five-point AF.

[0029] Furthermore, the photometry mode selection switch 53 is the switch input section which performs ***** of a central important photometry, a spot photometry, and a three-point separate valuation photometry.

[0030] The first release switch 55 and the second release switch 56 will correspond to release ** 6, the first release switch 55 will be in an ON state by the 1st stroke of this release ** 6, and the second release switch 56 will be in an ON state by the 2nd stroke of release ** 6.

[0031] The power switch 57 is a main switch which performs power-source ON of a camera, and OFF. Furthermore, the other switches 58 are the switch input sections which consist of A switch 9a which performs actuation about registration of TELE

switch 5a for performing the mode change-over switch and zooming which switch digital mode or silver salt digital photography mode, WIDE switch 5b, reference information, identification information, etc., etc., B switch 9b, etc.

[0032] And it consists of CPUs for the above CPU 27 to perform sequence control of the whole camera. It asks for spacing of two images by the ranging section 23, or this CPU27 calculates the amount of drives of the lens group for focus doubling from that 2 image spacing, and, and it performs drive control of the mirror which is not illustrated. [performing that drive control] [performing drive control of the fixed diaphragm 13]

[0033] Next, actuation of the gestalt of the 1st operation is explained with reference to the flow chart of drawing 3 thru/or drawing 7 .

[0034] Drawing 3 is a flow chart explaining the Main sequence of the camera in the gestalt of the 1st operation.

[0035] Although CPU27 is in a standby condition in the condition that the power switch 57 is off, it starts rising actuation from a standby condition by turning on the power switch 57.

[0036] And power-on processing is first performed at step S1. In this processing, it is sent out to a wide location from the collapsing position where the lens group 12 for focus doubling and the lens group 14 for zoom are not illustrated except that initialization of internal memory, and a dc-battery check and the initial display of the LCD monitor 44 are performed.

[0037] Subsequently, it is distinguished in step S2 whether T flag is "1." T flag is set to "1" when reference information is registered, and in not registering, it is set to "0." When T flag is "1", it shifts to step S13, and in the case of "0", it shifts to step S3.

[0038] By the way, only when the identification information inputted as a means identify the user of a camera, by the reference information registered as a user's description and the identification-information input means is in agreement, this invention has the data entry unit characterized by to enable actuation of a camera, memorizes two or more reference information and each photography mode, and relates to the camera which changes photography mode by the user of a camera. Here, reference information means the thing of the information beforehand registered into the camera as a user's description, and identification information means the thing of the information for distinguishing whether you are the user of a camera. For example, the password which had reference information registered, then identification information say the thing of the password which it is required and is entered after password registration each time.

[0039] The registration demand of register mode as shown in the LCD monitor 44 at drawing 8 (a) is expressed as step S3. Subsequently, 5sec timer which was built in the sequence controller 27 in step S4 and which is not illustrated is reset, and a count starts.

[0040] In step S5, it is distinguished whether A ** 9a of an operating button 9 is an ON state. Here, when A ** 9a is an ON state, it shifts to step S8, and in the case of an OFF state, it shifts to step S6.

[0041] At step S6, it is distinguished whether the time counter with which it is not illustrated in CPU27 is less than 5 seconds. Here, when the above-mentioned time counter is less than 5 seconds, it shifts to step S7, and in the case of 5 seconds or more, it shifts to step S31, and a camera sequence is performed.

[0042] At step S7, it is distinguished whether B ** 9b of an operating button 9 is an ON state. Here, when B ** 9b is an ON state, it shifts to step S31 and a camera sequence is performed, and when it is an OFF state, it shifts to the above-mentioned step S5.

[0043] Registration of reference information as shown in the LCD monitor 44 at drawing 8 (b), i.e., a face image input request, is expressed as step S8. Here, a camera user makes camera order reverse, turns a taking lens 2 to the direction of his face, grasps it, and pushes release ** 6 (second release switch 56).

[0044] Subsequently, in step S9, it is distinguished whether the second release switch 56 is an ON state. Here, in the case of an ON state, it shifts to step S10, and, as for the case of an OFF state, processing of step S9 is repeated.

[0045] Then, registration processing of a face image is performed at step S10. About the detail of this registration processing, it mentions later. And after T flag is set to "1" at step S11, registration processing in photography mode is performed at step S12. About the detail of this registration processing, it mentions later. Then, the camera sequence of step S31 is performed.

[0046] On the other hand, at the above-mentioned step S2, when T flag is "1", it shifts to step S13, and the input request of identification information as shown in the LCD monitor 44 at drawing 8 (c) is displayed. Here, a camera user makes camera order reverse, turns a taking lens 2 to the direction of his face, grasps it, and pushes release ** 6 (second release switch 56).

[0047] Subsequently, it is distinguished at step S14 whether the above-mentioned second release switch 56 is an ON state. Here, when the second release switch 56 is an ON state, it shifts to step S15, and as for the case of an OFF state, step S14 is repeated.

[0048] And face image distinction processing is performed at step S15. About the detail of this distinction processing, it mentions later.

[0049] In step S16, it is distinguished whether the 1st reference information memorized by EEPROM43 and identification information are in agreement. Here, when both are in agreement, it shifts to step S24, and in the case of an inequality, it shifts to step S18.

[0050] When the 1st reference information of the above and identification information were not in agreement and it is distinguished, it is distinguished whether it shifts to step S18 and the reference information memorized by EEPROM43 and identification information are in agreement. Here, when both are in agreement, it shifts to step S22, and in the case of an inequality, it shifts to step S18.

[0051] At step S18, an error message as shown in the LCD monitor 44 at drawing 8 (d) is made. Subsequently, in step S19, it is distinguished whether the power switch 57 is an ON state. Here, when the power switch 57 is an ON state, step S19 is repeated, and when it is an OFF state, it shifts to step S20.

[0052] Power-off processing is made at step S20. In power-off processing, set to the collapsing position of a lens, OFF of a LCD display, etc. are performed. And it goes into the condition of a standby mode at step S21.

[0053] In the above-mentioned step S17, when identification information and reference information are in agreement, it shifts to step S22 and a photography mode change possible display as shown in the LCD monitor 44 at drawing 8 (e) is made. Subsequently, if photography mode registration processing is performed at step S23, it will shift to step S31. In addition, about the detail of the above-mentioned photography mode registration processing, it mentions later.

[0054] Moreover, in the above-mentioned step S16, when identification information and the 1st reference information are in agreement, it shifts to step S24, the display in which registration change information is possible as shown in the LCD monitor 44 at drawing 8 (f) is made, and the input request of the existence of registration change information is displayed.

[0055] Subsequently, in step S25, it is distinguished whether A ** 9a of an operating button 9 is an ON state. Here, in the case of an ON state, it shifts to step S26, and in the case of an OFF state, it shifts to step S31 and a camera sequence is performed.

[0056] At step S26, the display of a selection demand of the contents of modification as shown in the LCD monitor 44 at drawing 8 (g) is made.

[0057] And it is distinguished in step S27 whether registration information elimination was chosen. Here, when registration information elimination is chosen, it shifts to step

S30, and when not chosen, it shifts to step S28.

[0058] It is distinguished at step S28 whether the registration information addition was chosen. Here, when a registration information addition is chosen, it shifts [above-mentioned] step S8, and when not chosen, it shifts to step S29.

[0059] At step S29, photography mode registration processing which mentions a detail later is performed.

[0060] On the other hand, at step S30, registration information elimination processing by display as shown in drawing 8 (h) is performed (it mentions later for details).

[0061] Next, with reference to drawing 4 , actuation of the subroutine "registration information elimination" in step S30 of the flow chart of drawing 3 is explained.

[0062] First, 5sec timer with which it is not illustrated in a sequence controller 27 at step S41 is reset, and a count starts. And in step S42, it is distinguished whether A ** 9a of an operating button 9 is an ON state. Here, in the case of an ON state, it shifts to step S47, and, in the case of an OFF state, shifts to step S43.

[0063] At step S43, it is distinguished whether B ** 9b of an operating button 9 is an ON state. Here, when the above-mentioned B ** 9b is an ON state, it shifts to step S45, and in the case of an OFF state, it shifts to step S44.

[0064] In step S44, it is distinguished whether the time counter with which it is not illustrated in a sequence controller 27 is less than 5 seconds. When this time counter is less than 5 seconds, it shifts to the above-mentioned step S42, and in the case of 5 seconds or more, this subroutine is completed.

[0065] At the above-mentioned step S43, if B ** 9b is an ON state, it will shift to step S45 and the reference information registered into EEPROM43 will all be eliminated. Subsequently, this routine is completed after T flag is set to "0" at step S46.

[0066] Moreover, reference information other than the 1st reference information registered into EEPROM43 at step S47 if A ** 9a is an ON state is eliminated at the above-mentioned step S42, and this subroutine is completed.

[0067] Next, with reference to the flow chart of drawing 5 , actuation of the subroutine "photography mode registration" of the flow chart of drawing 3 is explained.

[0068] First, the registration demand in photography mode as shown in the LCD monitor 44 at step S51 at drawing 8 (e) is displayed. Then, in step S52, it is distinguished whether A ** 9a of an operating button 9 is an ON state. Here, in the case of an ON state, it shifts to step S53, and, in the case of an OFF state, this subroutine is completed.

[0069] At step S53, the selection demand in exposure mode as shown in the LCD monitor 21 at drawing 8 (i) is displayed, and the decision in exposure mode is made.

Subsequently, at step S54, the selection demand in film feed mode is displayed on the LCD monitor 44, and the decision in film feed mode is made.

[0070] At step S55, the selection demand in stroboscope luminescence mode is displayed on the LCD monitor 44, and the decision in stroboscope luminescence mode is made. And at step S56, the selection demand in AF mode is displayed on the LCD monitor 44, and the decision in AF mode is made.

[0071] At step S57, the selection demand in photometry mode is displayed on the LCD monitor 44, and the decision in photometry mode is made. Subsequently, the termination selection demand in photography mode as shown in the LCD monitor 44 at drawing 8 (k) is expressed as step S58.

[0072] Here, in step S59, it is distinguished whether A ** 9a of an operating button 9 is an ON state. Here, in the case of an ON state, it shifts to step S60, and, as for the case of an OFF state, this step S59 is repeated.

[0073] And in step S60, each photography mode determined in the above-mentioned steps S53-S57 is registered into EEPROM43 as common mode of camera actuation to the reference information registered in step S10 in the flow chart of drawing 3 mentioned above.

[0074] Drawing 6 is a flow chart explaining actuation of the subroutine "face image registration" in step S10 of the flow chart of drawing 3.

[0075] First, at step S71, from the digital image pick-up optical system 30, a reference image is inputted and the reference information changed into digital value by the digital disposal circuit 36 is memorized by DRAM41. Subsequently, the color signal in each pixel in the reference image memorized by DRAM41 is changed into saturation, lightness, and the color information on a hue by CPU27 at step S72.

[0076] At step S73, the person field in the reference image memorized by DRAM41 is extracted by CPU27. And in order to reduce the bias of the brightness produced according to the photography conditions in the reference image memorized by DRAM41 by CPU27 at step S74 etc., amendment of a brightness value is performed.

[0077] At step S75, the template for reference is created by CPU27 based on the data of the reference image proper obtained by processing of the above-mentioned steps S72-S74. And the information on the template for reference created at the above-mentioned step S75 by step S76 is memorized by EEPROM43.

[0078] Drawing 7 is a flow chart explaining actuation of the subroutine "face image distinction" in step S15 of the flow chart of drawing 3.

[0079] First, a discernment image is inputted from the digital image pick-up optical system 30 at step S81, and the identification information changed into digital value by

the digital disposal circuit 36 is memorized by DRAM41. Subsequently, the color signal in each pixel in the discernment image memorized by DRAM41 is changed into saturation, lightness, and the color information on a hue by CPU27 at step S82.

[0080] And the person field in the discernment image memorized by DRAM41 is extracted by CPU27 at step S83. Next, at step S84, in order to reduce the bias of the brightness produced according to the photography conditions in the discernment image memorized by DRAM41 by CPU27 etc., amendment of a brightness value is performed.

[0081] At step S85, the template for discernment is created by CPU27 based on the data of the discernment image proper obtained by processing of the above-mentioned steps S82-S84. And the comparison of the template for reference memorized by the template for discernment created at the above-mentioned step S85 and EEPROM43 is performed in CPU27 at step S86.

[0082] Next, with reference to the flow chart of drawing 9 , the camera sequence in the gestalt of the 1st operation is explained.

[0083] Drawing 9 is a flow chart explaining actuation of the subroutine "a camera sequence" in step S31 of the flow chart of drawing 3 .

[0084] First, in step S91, it is distinguished whether the first release switch 55 is an ON state. Here, if the first release switch 55 is an ON state, the sequence not more than step S99 will be performed. Moreover, if it is an OFF state, the sequence not more than step S92 will be performed.

[0085] At step S92, it is distinguished whether TELE switch 5a of the zoom switch 5 is an ON state. Here, when TELE switch 5a is an ON state, it shifts to step S93, and in the case of an OFF state, it shifts to step S94.

[0086] At step S93, the lens group 14 for zoom is moved by the drive of the zoom drive circuit 20, and the TELE drive which is zooming by the side of a long focus is performed.

[0087] At step S94, it is distinguished whether WIDE switch 5b of the zoom switch 5 is an ON state. Here, when WIDE switch 5b is an ON state, it shifts to step S95, and in the case of an OFF state, it shifts step S96.

[0088] At step S95, the lens group 14 for zoom is moved by the drive of the zoom drive circuit 20, and the WIDE drive which is zooming by the side of a short focus is performed.

[0089] And in step S96, it is distinguished whether the power switch 57 is an ON state. Here, when the power switch 57 is an ON state, it shifts to step S91 again, and, in the case of an OFF state, shifts to step S97.

[0090] If power-off processing is performed at this step S97, it will go into a standby mode at continuing step S98.

[0091] Moreover, when the first release switch 55 is OFF at the above-mentioned step S91, a photometry is performed by the area sensor 34 at step S99. After a photometry is completed, a photographic subject brightness value is outputted from the area sensor drive circuit 35, and it is inputted into CPU27 via a digital disposal circuit 36.

[0092] Subsequently, the amount data of drives of the image pick-up lens for driving in the distance to a photographic subject and the focus location corresponding to it calculate in CPU27 at step S100 by the ranging section 23. And based on the amount of drives calculated at the above-mentioned step S100, the lens group 12 for focus doubling drives through the focus doubling drive circuit 18 by CPU27 at step S101.

[0093] At step S102, it is distinguished whether the second release switch 56 is an ON state. Here, if the second release switch 56 is an ON state, the sequence not more than step S104 will be performed. Moreover, if it is an OFF state, the sequence not more than step S103 will be performed.

[0094] At step S103, it is distinguished whether the first release switch 55 is an ON state. Here, if the first release switch 55 is an ON state, the sequence not more than step S102 will be performed. On the other hand, if it is an OFF state, the sequence not more than step S91 will be performed.

[0095] Exposure processing is performed at step S104. As for this exposure, both photography of the silver salt filter with which the silver salt film pickup optical system 11 was used, and digital photography for which the digital image pick-up optical system 30 was used are performed to coincidence.

[0096] At step S105, a film can wind up by one piece. And the image of the result by which digital photography was carried out is expressed only for predetermined time amount to the LCD monitor 44 as step S106. Then, it shifts to the above-mentioned step S91, and the following sequences are performed.

[0097] Thus, according to the gestalt of the 1st operation, the image of a user's face is inputted and registered as identification information showing the description of the user of a camera, and since collating ***** is good in this face image, a user can be specified easily.

[0098] Next, the gestalt of implementation of the 2nd of this invention is explained.

[0099] The gestalt of the 2nd operation explains the pattern of a camera user's voice about the camera which operates as reference and identification information.

[0100] Drawing 10 is what showed the appearance configuration of the camera

concerning the gestalt of the 2nd operation, and the perspective view which looked at (a) from the camera front, and (b) are the perspective views seen from camera back.

[0101] In drawing 10 , the LCD monitor 8 for displaying the electronic image mostly obtained by digital image pick-up optical system in the center section and photography data is formed at the tooth-back section of camera body 1a. And the microphone 60 for inputting voice as the input operating button 9 which consists of A**9a and B ** 9b near this LCD monitor 8 is formed.

[0102] Since it is the same as the gestalt of the 1st operation which is shown in drawing 2 and which was mentioned above about other configurations, the same reference number is given to the same component, and the explanation is omitted.

[0103] Drawing 11 is the block diagram showing the internal configuration of the camera concerning the gestalt of the 2nd operation.

[0104] In addition, in drawing 11 , the same reference number is given to the same component as the gestalt of the 1st operation shown in drawing 1 mentioned above, and the explanation is omitted.

[0105] In drawing 11 , the voice input section 61 is connected to CPU27 through the data bus 26. This voice input section 61 has the speech processing circuit 63 which performs predetermined processing of changing an analog sound signal into a receipt and changing that analog sound signal into a digitized voice signal, and is constituted by the microphone 62 and this microphone 62 for inputting voice.

[0106] Next, actuation of the gestalt of the 2nd operation is explained with reference to the flow chart of drawing 12 .

[0107] In the flow chart of this drawing 12 , since steps S111-S118 and processing actuation of S120, S122, S123, S125-S140 are the same as that of steps S1-S8 in the flow chart of drawing 3 , and S11, S12, S16-S31, explanation is omitted.

[0108] And if a reference information registration demand is made at step S118, a camera user will speak about short language toward the microphone 62 of a camera at continuing step S119. Then, if T flag is set to "1" at step S120, the registration demand in photography mode will be made at step S121. Subsequently, registration processing in photography mode is performed at step S122. Then, it shifts to step S140 and a camera sequence is performed.

[0109] Moreover, a demand of the input of identification information performs a subroutine "voice distinction" in step S124 at step S123. Then, it shifts to step S125.

[0110] Drawing 13 is a flow chart explaining actuation of the subroutine "voice registration" in step S119 of the flow chart of drawing 12 .

[0111] First, in step S151, reference information is inputted from the microphone 62 in

the voice input section 61, and the reference information changed into digital value by the speech processing circuit 63 is memorized by DRAM41. Subsequently, the amplitude pattern of the voice in the reference information memorized by DRAM41 by CPU27 at step S152 etc. is analyzed.

[0112] Next, the description of the voice in the reference information memorized by DRAM41 is extracted by CPU27 at step S153. And the linearity of reference information or the nonlinear time amount normalization processing memorized by DRAM41 is performed by CPU27 at step S154.

[0113] At step S155, a reference voice pattern is created by CPU27 based on the data of the reference information proper obtained by processing of the above-mentioned steps S152–S154. And the information on the reference voice pattern created at the above-mentioned step S155 by step S156 is memorized by EEPROM43.

[0114] Drawing 14 is a flow chart explaining actuation of the subroutine “voice distinction” in step S124 of the flow chart of drawing 12 .

[0115] First, at step S161, identification information is inputted from a microphone 62 and the identification information changed into digital value by the speech processing circuit 63 is memorized by DRAM41. Subsequently, the amplitude pattern of the voice in the identification information memorized by DRAM41 etc. is analyzed by CPU27 at step S162.

[0116] And the description of the voice in the identification information memorized by DRAM41 is extracted by CPU27 at step S163. Next, the linearity of identification information or the nonlinear time amount normalization processing memorized by DRAM41 is performed by CPU27 at step S164.

[0117] At step S165, a discriminating-tone voice pattern is created by CPU27 based on the data of the identification information proper obtained by processing of the above-mentioned steps S162–S164. Subsequently, the comparison of the reference voice pattern memorized by the discriminating-tone voice pattern created at the above-mentioned step S165 by step S166 and EEPROM43 is performed.

[0118] Thus, according to the gestalt of the 2nd operation, a user’s voice is inputted and registered as identification information showing the description of the user of a camera, and since collating ***** is good in this voice, a user can be specified easily.

[0119] Next, the gestalt of implementation of the 3rd of this invention is explained.

[0120] The gestalt of the 3rd operation explains the configuration of a camera user’s eye, and a pattern about the camera which operates as reference and identification information.

[0121] Drawing 15 is what showed the appearance configuration of the camera concerning the gestalt of the 3rd operation, and the perspective view which looked at (a) from the camera front, and (b) are the perspective views seen from camera back.

[0122] Since it is the same as the gestalt of the 1st operation which is shown in drawing 2 and which was mentioned above about the configuration of the camera by the gestalt of the 3rd operation shown in this drawing 15, the same reference number is given to the same component, and that explanation is omitted.

[0123] Drawing 16 is the block diagram showing the internal configuration of the camera concerning the gestalt of the 3rd operation.

[0124] In addition, in drawing 16, the same reference number is given to the same component as the gestalt of the 1st operation shown in drawing 1 mentioned above, and the explanation is omitted.

[0125] In drawing 16, the finder optical system 66 has lenses 67 and 69, and these lenses 67 and the half mirror 68 prepared among 69, and is constituted. This half mirror 68 is formed so that the light from a finder eye contacting part may be reacted to the downward **** detecting element 65.

[0126] This **** detecting element 65 has the separator optical system 71, an area sensor 72, the area sensor drive circuit 73, and a digital disposal circuit 74, and is constituted.

[0127] The above-mentioned area sensor 72 is for receiving the light from a half mirror 68, and is a sensor for incorporating a camera user's **** (the configuration of an eye, pattern) as an image. The area sensor drive circuit 73 carries out drive control of the above-mentioned area sensor 72, and receives the analog video signal from this area sensor 72.

[0128] Moreover, a digital disposal circuit 74 is a circuit for changing the analog video signal from the above-mentioned area sensor drive circuit 73 into a receipt, it changing the analog video signal into digital value, and performing predetermined processing of color conversion etc. further.

[0129] Next, actuation of the gestalt of the 3rd operation is explained with reference to the flow chart of drawing 17.

[0130] In the flow chart of this drawing 17, since steps S171-S179, S181, S183, S184-S185, and processing actuation of S187-S202 are the same as that of step S1 in the flow chart of drawing 3 R> 3 - S9, S11, S12, S13-S14, and S16-S31, explanation is omitted.

[0131] And at continuing step S179, if a reference information registration demand is made at step S178, a camera user will push release ** 6 (second release switch 56),

where an eye is applied to a finder ocular. Here, a push on release ** 6 performs registration processing of the eye image for reference at continuing step S180. Then, it shifts to step S181.

[0132] If T flag is set to "1" at step S181, the registration demand in photography mode will be made at continuing step S182. And if registration processing in photography mode is performed at step S183, it will shift to step S202 and a camera sequence will be performed.

[0133] Moreover, at continuing step S185, if the input of identification information is required at the above-mentioned step S184, a camera user will push release ** 6 (second release switch 56), where an eye is applied to a finder ocular. Here, a push on release ** 6 performs distinction processing of an eye image in continuing step S186. Then, it shifts to step S187.

[0134] Drawing 18 is a flow chart explaining actuation of the subroutine "eye image registration" in step S180 of the flow chart of drawing 17 .

[0135] First, in step S211, from the finder optical system 66, the reference image inputted through the half mirror 68 is changed into digital value by the digital disposal circuit 74 in the **** detecting element 65, and is memorized by DRAM41 by it. Subsequently, the color signal in each pixel in the reference image memorized by DRAM41 is changed into saturation, lightness, and the color information on a hue by CPU27 at step S212.

[0136] At step S213, the eye field in the reference image memorized by the above DRAM 41 is extracted by CPU27. And in order to reduce the bias of the brightness of the reference image produced according to the photography conditions in the reference image memorized by DRAM41 by CPU27 at step S214 etc., amendment of a brightness value is performed.

[0137] At step 215, the template for reference is created by CPU27 based on the data of the reference image proper obtained by processing of the above-mentioned steps S212-S214. And the information on the template for reference created at the above-mentioned step S215 by step S216 is memorized by EEPROM43.

[0138] Drawing 19 is a flow chart explaining actuation of the subroutine "eye image distinction" in step S186 of the flow chart of drawing 17 .

[0139] First, in step S221, the discernment image inputted through the half mirror 68 from the finder optical system 66 is changed into digital value by the digital disposal circuit 74 in the **** detecting element 65, and is memorized by DRAM41 by it. Subsequently, the color signal in each pixel in the discernment image memorized by DRAM41 is changed into saturation, lightness, and the color information on a hue by

CPU27 at step S222.

[0140] At step S223, the eye field in the discernment image memorized by DRAM41 is extracted by CPU27. And in order to reduce the bias of the brightness of the discernment image produced according to the photography conditions in the discernment image memorized by DRAM41 by CPU27 at step S224 etc., amendment of a brightness value is performed.

[0141] At step S225, the template for discernment is created by CPU27 based on the data of the discernment image proper obtained by processing of the above-mentioned steps S222-S224. Then, the comparison of the template for reference memorized by the information and EEPROM43 of the template for discernment created at the above-mentioned step S225 by step S226 is performed.

[0142] Thus, according to the gestalt of the 3rd operation, a user's eye image is inputted and registered as identification information showing the description of the user of a camera, and since collating ***** is good in this eye image, a user can be specified easily.

[0143] In addition, this invention is not caught by discernment of the 1st mentioned above thru/or the camera user by the description of the gestalt of the 3rd operation. For example, it is realizable if established as a user's description like the fingerprint.

[0144] Moreover, according to the gestalt of the above-mentioned implementation of this invention, a configuration can be obtained as the following.

[0145] Namely, (1) An identification information input means to input the identification information for specifying the user of a camera, A reference information input means to input the reference information referred to by relating with the above-mentioned identification information, The reference information memorized by the reference information storage means which can two or more memorize the above-mentioned reference information, and the identification information inputted into the above-mentioned identification information input means and the above-mentioned storage means is collated. The camera characterized by providing a distinction means to distinguish whether such information is in agreement, and a decision means of operation to opt for actuation of a camera based on the collating result of this distinction means.

[0146] (2) The camera of the additional remark term 1 publication characterized by furthermore providing an initial mode-of-operation setting means to set it as the initial mode of operation according to a camera user, based on the distinction result of the above-mentioned distinction means.

[0147] (3) The above-mentioned identification information is a camera given in the

above (1) characterized by being the information for identifying a camera user's voice.

[0148] (4) The above-mentioned identification information is a camera given in the above (1) characterized by being the information for identifying a camera user's face.

[0149] (5) The above-mentioned identification information is a camera given in the above (1) characterized by being the information for identifying a camera user's eye.

[0150] (6) The above-mentioned identification information is a camera given in the above (1) characterized by being the information for identifying a camera user's fingerprint.

[0151] (7) It is the camera of the publication by the above (1) carried out [forbidding actuation of a camera, and] as the description when actuation of a camera is enabled, the above-mentioned identification information and the above-mentioned reference information were not [the above-mentioned identification information and the above-mentioned reference information of the above-mentioned decision means / of operation / corresponded with the above-mentioned distinction means, it was distinguished,] in agreement with the above-mentioned distinction means and it is distinguished.

[0152]

[Effect of the Invention] As mentioned above, according to this invention, it is effective in theft prevention and a user is that even two or more persons do not become complicated, but informational registration and an informational input offer a user-friendly camera.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram showing the internal configuration of the camera concerning the gestalt of implementation of the 1st of this invention.

[Drawing 2] It is what showed the appearance configuration of the camera concerning the gestalt of implementation of the 1st of this invention, and the perspective view which looked at (a) from the camera transverse plane, and (b) are the perspective views seen from camera back.

[Drawing 3] It is a flow chart explaining the Maine sequence of the camera in the gestalt of the 1st operation.

[Drawing 4] It is a flow chart explaining actuation of the subroutine "registration information elimination" in step S30 of the flow chart of drawing 3 .

[Drawing 5] It is a flow chart explaining actuation of the subroutine "photography

mode registration" of the flow chart of drawing 3 .

[Drawing 6] It is a flow chart explaining actuation of the subroutine "face image registration" in step S10 of the flow chart of drawing 3 .

[Drawing 7] It is a flow chart explaining actuation of the subroutine "face image distinction" in step S15 of the flow chart of drawing 3 .

[Drawing 8] It is drawing having shown the example of the character representation displayed on the LCD monitor 44.

[Drawing 9] It is a flow chart explaining the subroutine "a camera sequence" in step S31 of the flow chart of drawing 3 .

[Drawing 10] It is what showed the appearance configuration of the camera concerning the gestalt of implementation of the 2nd of this invention, and the perspective view which looked at (a) from the camera transverse plane, and (b) are the perspective views seen from camera back.

[Drawing 11] It is the block diagram showing the internal configuration of the camera concerning the gestalt of implementation of the 2nd of this invention.

[Drawing 12] It is a flow chart explaining actuation of the Maine sequence of the camera in the gestalt of the 2nd operation.

[Drawing 13] It is a flow chart explaining actuation of the subroutine "voice registration" in step S119 of the flow chart of drawing 12 .

[Drawing 14] It is a flow chart explaining actuation of the subroutine "voice distinction" in step S124 of the flow chart of drawing 12 .

[Drawing 15] It is what showed the appearance configuration of the camera concerning the gestalt of implementation of the 3rd of this invention, and the perspective view which looked at (a) from the camera transverse plane, and (b) are the perspective views seen from camera back.

[Drawing 16] It is the block diagram showing the internal configuration of the camera concerning the gestalt of implementation of the 3rd of this invention.

[Drawing 17] It is a flow chart explaining actuation of the Maine sequence of the camera in the gestalt of the 3rd operation.

[Drawing 18] It is a flow chart explaining actuation of the subroutine "eye image registration" in step S180 of the flow chart of drawing 17 .

[Drawing 19] It is a flow chart explaining actuation of the subroutine "eye image distinction" in step S186 of the flow chart of drawing 17 .

[Description of Notations]

1 Camera Body,

2 Taking Lens,

3 Image Pick-up Lens,
4 Optical Finder,
5 Zoom Switch,
5a TELE switch,
5b WIDE switch,
6 Release **,
7 Stroboscope Light-emitting Part,
8 44 LCD monitor,
9 Input Operating Button,
9a A **,
9b B **,
11 Silver Salt Filming Optical System,
15 Shutter Style,
16 Silver Halide Film (Film),
18 Focus Doubling Drive Circuit,
19 Drawing Drive Circuit,
20 Zoom Drive Circuit,
21 Shutter Drive Circuit,
22 Film Drive Circuit,
23 Ranging Section,
24 Finder Optical System,
26 Data Bus,
27 Sequence Controller (CPU),
30 Digital Image Pick-up Optical System,
34 Area Sensor,
35 Area Sensor Drive Circuit,
36 Digital Disposal Circuit,
39 Stroboscope Light-emitting Part,
40 Stroboscope Circuit,
41 DRAM,
42 Flash Memory,
43 EEPROM,
44 LCD Monitor,
45 Drawing Selection Dial,
46 It is Selection Dial at the Time of Shutter Second,
49 Exposure Mode Selection Switch (SW),

- 50 Film Feed Mode Selection Switch (SW),
- 51 Stroboscope Luminescence Mode Selection Switch (SW),
- 52 AF Mode Selection Switch (SW),
- 53 Photometry Mode Selection Switch (SW),
- 55 First Release Switch (1RSW),
- 56 Second Release Switch (2RSW),
- 57 Power Switch (PWSW),
- 58 Other switches (SW).

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